REMARKS

Claims 1-30 and 46-53 are currently pending. No new claims or claim amendments are submitted herewith.

Rejections under 35 U.S.C. §103

Claims 1-4 and 6-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Casey et al (WO 01/68962 A2) in combination with Hernandez et al (U.S. Patent Application Publication 2002/0071951 A1).

The Office Action states (p 3) "A quench zone shorter than 16 feet would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Casey et al principally because Casey et al teaches…a quench zone of from 16 feet to 20 feet and since the conditions of the claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

The Applicants disagree. Claim 1, and Claims 2-4 and 6-15 which depend from Claim 1 recite, inter alia, melt spinning poly(trimethylene terephthalate) into fibers on equipment *having a quench zone shorter than 16 feet.* As noted in the present application (para [0037] of the Patent Application Publication), "In preferred embodiments, standard equipment such as that conventionally used in making yarn from PET or nylon can be used in the processes disclosed herein." As described (para [0049]) "The processes disclosed herein are particularly advantageous for use on equipment having a quench zone length less than 16 feet. Generally, the length of the quench zone is at least about 12 feet, although quench zones shorter than 12 feet can be used…." In the present application, (see para [0019]), quench zone is used "with regard to equipment for processing PTT fibers to refer to the cooling distance from the spinneret from which polymer is extruded to make a spun fiber, to the roll that is used to forward the spun fiber at a draw off speed to cans for subsequent drawing."

In contrast, Casey describes (See p. 3) "a process for making textile staple fibre from polytrimethylene terephthalate (PTT) on existing PET textile stable fibre making equipment which comprises:...(c) moving the spun yarn to a first takeup roll wherein *the distance from the spinneret to the first takeup roll is from 16 to 20 feet,*…." (emphasis added).

Casey also teaches (p. 9, lines 9-20) "It is important that a long fibre culmination zone (the distance from the spinneret to the take up roll) be used. This means that *the zone should be 16 to 20 feet rather than the standard 8 to 12 feet for PET.* In process shrinkage of PTT UDY [undrawn yarn] is relatively high so the process must allow the fibre to establish a stable molecular structure before all of the filaments are combined into one large draw process feed yarn. In the production of PET staple fibre, this is not a significant problem. PTT has a more

elastic crystalline morphology so the longer fibre culmination link helps stabilize the yarn allowing a manufacture to avoid additional air conditioning costs." (emphasis added). Thus, Casey specifically teaches away from using a quench zone of shorter than 16 feet, so one of skill in the art would not have been motivated to optimize the quench zone length to arrive at the claimed invention.

Further, Applicants submit that the quench zone for given spinning equipment is fixed and is not conveniently changed. Thus, the experimentation to discover an optimum quench zone would not be routine, especially since one of skill in the art would not have been motivated to optimize the quench zone of Casey since it is taught as necessary.

Finally, as noted by the Office Action, Casey teaches a process of making 1-3 dpf staple fiber from PTT and Hernandez teaches a process of making 0.8-6 dpf staple fiber from PTT. Claim 1 and the claims that depend therefrom are drawn to a process for producing 6 to 25 dpf carpet staple fiber. Applicants submit that the higher dpf yarn has a larger diameter, it will take it longer to cool and establish a stable molecular structure. As described above, Casey teaches that a long 16-20 ft quench zone is necessary to establish the stable molecular structure. However, Chang discovered that a shorter quench zone is useful for the claimed process, which could not be expected for equipment having a quench zone shorter than 16 feet given the teachings of Casey.

For at least these reasons, neither Casey alone nor Casey in view of Hernandez teaches or suggests all of the limitations of the presently claimed invention. Reconsideration and withdrawal is respectfully requested.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Casey in combination with Hernandez as applied to claims 1-4 and 6-15, and further in view of Bull et al (GB 992,670). The Office Action relies on Bull to teach a process of making staple fiber from polyester (including PTT) including providing a tow of about 100,000 denier per inch. Claim 5 depends from Claim 1, so, for the reasons given above, Applicants submit that Bull does not cure the deficiency of Casey or Casey in view of Hernandez, thus all of the limitations of the present claims are not taught or suggested. Reconsideration and withdrawal is respectfully requested.

Claims 16-20 and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casey. Claim 16 recites, inter alia, melt spinning poly(trimethylene terephthalate) into fibers on equipment *having a quench zone shorter than 16 feet.* Claims 17-20 and 22-30 depend from Claim 16 and thus incorporate all of the limitations therein. Again the Office Action states that "A quench zone shorter than 16 feet would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Casey et al…". For at least the reasons given above, the Applicants disagree. Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 21 was rejected under 35 U.S.C. §103(a) as being unpatentable over Casey in combination with Hernandez as applied to claims 1-4 and 6-15, and further in view of Bull. Bull is relied upon to teach a process of making staple fiber from polyester (including PTT) including providing a tow of about 100,000 denier per inch. Claim 21 depends from Claim 16 and therefore incorporates all of the limitations therein. Again, for the reasons given above, Applicants submit that Bull does not cure the deficiency of Casey or Casey in view of Hernandez, thus the present claims are not taught or suggested. Reconsideration and withdrawal is respectfully requested.

Claims 46-49 were rejected under 35 U.S.C. §103(a) as being unpatentable over Casey in combination with Hernandez. The Office Action states that a temperature of less than 60C in a first drawing stage would have been obvious to one of ordinary skill in the art "principally because Casey et al teaches (page 12, lines 12-14) a minimum temperature of 60C and since the conditions of the claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation" (Office Action, p. 6). The Applicants traverse. Casey et al (page 12, lines 11-16) reads "The initial draw point of the UDY tow in the first draw stage should occur under water heated to *a minimum of 60C, preferably 60 to 100C. Keeping the draw point hot improves draw process performance* by significantly reducing the impact of extrusion conditions on production draw ratios." (emphasis added).

Thus, Casey teaches that temperatures should be *above* 60C, and if one of skill in the art were to optimize the parameters of Casey, the motivation would be to draw at temperatures *above* 60C. This is in contrast to the present claims which recite drawing the yarn under wet conditions at a temperature of *less than* 60°C. For at least this reason, reconsideration and withdrawal is respectfully requested.

Claims 50-53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Casey. Again, the Office Action states that a temperature of less than 60C in a first drawing stage would have been obvious to one of ordinary skill in the art "principally because Casey et al teaches (page 12, lines 12-14) a minimum temperature of 60C…" (Office Action, p. 6). As noted above, Casey teaches temperatures of *above* 60C in contrast to the present claims which recite drawing the yarn under wet conditions at a temperature of *less than* 60°C. For at least this reason, reconsideration and withdrawal is respectfully requested.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,

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